Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An isolated Nod-factor binding element comprising:

a) one or more isolated first Nod-factor binding polypeptide ~~(NFR polypeptide) having an~~ comprising at least 70% amino acid sequence identity ~~that is at least identical~~ to SEQ ID NO:8; or

b) a fragment of said first polypeptide;

wherein said one or more first polypeptide or fragment comprises at least 2 extracellular domain LysM motifs; and

wherein said one or more first polypeptide or fragment can selectively bind strain-specific forms of Nod-factor.

~~having a specific Nod-factor binding property or a functional fragment thereof,wherein the amino acid sequence of said NFR polypeptide is at least 60% identical to SEQ ID NO:8.~~

2. (Withdrawn, Currently Amended) ~~The~~ An isolated Nod-factor binding element comprising: ~~of claim 1, wherein said~~

a) one or more isolated second Nod-factor binding polypeptide ~~(NFR polypeptide) is NFR1~~ comprising at least 70% ~~the~~ amino acid sequence identity to ~~selected from the group consisting of~~ SEQ ID NO: 24~~, 25, 52, and 54~~; or

b) a fragment of said second polypeptide;

wherein said one or more second polypeptide or fragment comprises at least 2 extracellular domain LysM motifs; and

wherein said one or more second polypeptide or fragment can selectively bind strain-specific forms of Nod-factor.

3. (Currently Amended) The isolated Nod-factor binding element of claim [1] 4, wherein said one or more first polypeptide ~~(NFR polypeptide) is NFR5 comprising~~ comprises ~~the~~ an amino acid sequence selected from the group consisting of SEQ ID NO: 8, 15, 32, 40, ~~and~~ 48, and fragments thereof; and
wherein said one or more second polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 24, 25, 52, 54, and fragments thereof; and
wherein said first and second polypeptides or fragments each comprises at least 2 extracellular domain LysM motifs and can selectively bind strain-specific forms of Nod-factor.

4. (Currently Amended) The isolated Nod-factor binding element of claim 1, further comprising:

~~a) a NFR polypeptide or a functional fragment thereof, wherein the amino acid sequence of said NFR polypeptide is that is at least 60% identical to SEQ ID No: 24 or 25; and b)~~

~~a NFR~~ an isolated second Nod-factor binding polypeptide ~~or a functional fragment thereof, wherein the~~ comprising at least 70% amino acid sequence identity to ~~of said NFR polypeptide is has at least 60 % identical~~ to ~~a sequence selected from the group consisting of~~ SEQ ID No: ~~8, 15, and 32~~ 24; or a fragment thereof, wherein said second polypeptide or fragment comprises at least 2 extracellular domain LysM motifs and can selectively bind strain-specific forms of Nod-factor.

5. (Currently Amended) The isolated Nod-factor binding element of claim 1, comprising:

a) ~~the NFR~~ an isolated second Nod-factor binding polypeptide, ~~that is NFR1 or a functional fragment thereof, having the~~ comprising an amino acid sequence selected from the group consisting of SEQ ID No: 24, 25, 52, and 54; or a fragment of said first polypeptide; and

b) ~~the NFR~~ an isolated first Nod-factor binding polypeptide ~~that is NFR5 or a functional fragment thereof, having~~ comprising an amino acid sequence selected from the group consisting of SEQ ID No: 8, 15, 32, 40, and 48; or a fragment of said second polypeptide;

wherein said first and second polypeptide or fragments each comprises at least 2 extracellular domain LysM motifs and can selectively bind strain-specific forms of Nod-factor.

6. (Withdrawn, Currently Amended) An isolated nucleic acid molecule encoding a ~~NFR~~ first Nod-factor binding polypeptide or fragment according to claim 1~~, wherein the NFR amino acid sequence is at least 70% identical to either of SEQ ID No: 8, 15, or 25~~.

7. (Withdrawn, Currently Amended) An isolated nucleic acid molecule encoding a ~~NFR1~~ second Nod-factor binding polypeptide or fragment according to claim 2~~, comprising the amino acid sequence selected from the group consisting of SEQ ID No: 24, 25, 52, and 54~~.

8. (Withdrawn, Currently Amended) An isolated nucleic acid molecule encoding a ~~NFR5~~ first or second Nod-factor binding polypeptide or fragment according to claim 3~~, comprising an amino acid sequence selected from the group consisting of SEQ ID No; 8, 15, 32, 40, and 48~~.

9. (Withdrawn, Currently Amended) An isolated nucleic acid molecule which encodes a first or second Nod-factor binding polypeptide or fragment of claim 3, ~~a Nod-factor binding element~~, wherein said nucleic acid molecule hybridizes with a nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of SEQ ID No: 6, 7, 11, 12, 21, 22, 23, 39, 47, 51, and 53 under stringency conditions of no less than about 1.0xSSC at 65° C.

10. (Withdrawn, Currently Amended) An expression cassette comprising a nucleic acid molecule encoding ~~an NFR~~ one or more first or second Nod-factor binding polypeptide ~~having a specific Nod-factor binding property~~, or ~~a functional~~ fragment thereof, wherein said polypeptides or fragments comprise at least 2 extracellular domain LysM motifs and can selectively bind strain-specific forms of Nod-factor, and wherein said Nod-factor binding polypeptide comprises an amino acid sequence:

a) having at least [6] 70% sequence identity to ~~identical to~~ SEQ ID No: 8, 15, or 25;

b) selected from the group consisting of SEQ ID No: 8, 15, 24, 25, 32, 40, 48, 52, and 54; or

c) encoded by a nucleic acid molecule that hybridizes with a nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of SEQ ID No: 6, 7, 11, 12, 21, 22, 23, 39, 47, 51, and 53 under stringency conditions of no less than about 1.0xSSC at 65° C.

11. (Withdrawn) An expression cassette comprising a nucleic acid molecule according to claim 6.

12. (Withdrawn, Currently Amended) The expression cassette of claim 10, wherein the nucleic acid molecule encoding the ~~a NFR~~ Nod-factor binding polypeptide or fragment is operably linked to a transcriptional regulatory element.

13. (Withdrawn) A vector comprising the expression cassette of claim 12.

14. (Withdrawn) A cell that is stably transformed with the expression cassette of claim 12.

15. (Withdrawn) The cell according to claim 14, wherein said cell is a plant cell.

16. (Withdrawn, Currently Amended) A method of producing a plant expressing a Nod-factor binding element, the method comprising:

introducing into the plant a transgenic expression cassette comprising a nucleic acid sequence encoding ~~a NFR~~ one or more Nod-factor binding polypeptide or ~~functional~~ fragment thereof, wherein said Nod-factor binding polypeptide comprises ~~having~~ an amino acid sequence:

a) selected from the group consisting of SEQ ID No: 8, 15, 24, 25, 32, 40, 48, 52, and 54;

b) having at least [6]70% sequence identity to ~~identical to~~ SEQ ID No: 8, 15, 25, or 32;

~~c) comprising SEQ ID No: 8, 15, 24, 25, 32, 40, 48, 52, or 54; or~~

d) encoded by a nucleic acid molecule that hybridizes with a nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of SEQ ID No: 21, 22, 23, 51, and 53 under stringency conditions of no less than about 1.0xSSC at 65° C;

wherein said polypeptides or fragments comprise at least 2 extracellular domain LysM motifs can selectively bind strain-specific forms of Nod-factor, and

wherein the nucleic acid sequence is operably linked to a promoter, and

selecting transgenic plants and their progeny expressing said ~~NFR~~ Nod-factor binding polypeptide.

17. (Withdrawn) The method of claim 16, wherein the transgenic expression cassette is introduced into the plant through a sexual cross.

18. (Withdrawn) The method of claim 16, wherein said promoter is a native or heterologous root specific promoter.

19. (Withdrawn) The method of claim 16, wherein said promoter is a native or heterologous constitutive promoter.

20. (Withdrawn, Currently Amended) A transgenic plant expressing ~~one or more~~ a heterologous ~~NFR~~ Nod-factor binding element ~~polypeptides or functional fragment~~, according to claim 1.

21. (Withdrawn, Currently Amended) The transgenic plant of claim 20, expressing a Nod-factor binding element according to claim 2, and having a specific rhizobial strain recognition.

22. (Withdrawn) The transgenic plant of claim 20, wherein the plant is a non-nodulating dicotyledenous plant.

23. (Withdrawn) The transgenic plant of claim 22, wherein the plant is a non-nodulating monocotyledonous plant.

24. (Withdrawn) The transgenic plant of claim 23, wherein said monocotyledonous plant is a cereal.

25. (Withdrawn, Currently Amended) A method for marker assisted breeding of ~~*NFR*~~ Nod-factor binding alleles [,] encoding variant Nod-factor binding polypeptides ~~(NFR polypeptides)~~, comprising the steps of:

~~a.~~ determining the nodulation frequency of legume plants expressing a variant ~~NFR~~ Nod-factor binding polypeptide having specific rhizobial strain recognition ~~Nod-factor binding properties~~ and having an amino acid sequence at least [6] 70% identical to a sequence selected from the group consisting of SEQ ID No: 8, 15, 24, 25, 32; ~~, and~~

~~b.~~ identifying a DNA polymorphism at a locus genetically linked to or within the allele encoding said variant ~~NFR~~ Nod-factor binding polypeptide, ~~and~~

c. preparing a molecular marker based on said DNA polymorphism, and

d. using said molecular marker for the identification and selection of a plant carrying an ~~*NFR*~~ Nod-factor binding protein allele encoding said variant ~~NFR~~ Nod-factor binding polypeptide.

26. (Withdrawn, Currently Amended) The method according to claim 25, wherein said variant ~~NFR~~ Nod-factor binding polypeptide has an amino acid sequence ~~substantially similar~~ comprising at least 80% sequence identity with ~~to~~ a sequence selected from the group consisting of SEQ ID No: 8, 15, 24, 25, 32, 40, 48, 52, and 54.

27. (Withdrawn, Currently Amended) A plant selected according to the method of claim 24, carrying a ~~*NFR*~~ Nod-factor binding protein allele encoding a variant ~~NFR~~ Nod-factor binding polypeptide.

28. (Withdrawn, Currently Amended) The method of claim 24 wherein the selected plant has enhanced nodulation frequency and/or root nodule occupancy and/or enhanced symbiotic nitrogen fixation ability relative to a control plant comprising a non-variant ~~NFR~~ Nod-factor binding allele.

29. (Withdrawn) The method according to claim 28, wherein said plant is a legume.